

The listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Canceled)

2. (Currently Amended) A radio digital signal receiver, comprising:

means for individually detecting a received C/N and a decoding error rate of a received digital signal;

means for estimating inherent phase noise characteristics of a local oscillator in an outdoor unit connected to a receiving terminal of the radio digital signal receiver on the basis of foresight information for the relationship among three values of a received C/N, a decoding error rate and a phase noise and the detected received C/N and decoding error rate, in a burst symbol reception mode for regenerating a carrier from a burst symbol signal the detected decoding error rate being one detected when the received C/N exceeds a first predetermined threshold value; and

means for setting a carrier regenerative loop characteristics characteristic on the basis of the estimated inherent phase noise characteristics of the local oscillator in the outdoor unit,

wherein the means for setting a carrier regenerative loop characteristic operates so that (i) if the detected decoding error rate is equal to or less than a second predetermined threshold value, a carrier regenerative loop characteristic corresponding to a critical CNR by a phase noise having a rapid variation property is set up and (ii) if the detected decoding error rate exceeds the second predetermined threshold value, a carrier regenerative loop characteristic corresponding to a critical CNR by a phase noise having a gentle variation property.

3. (Previously Presented) The radio digital receiver according to claim 2, wherein said means for setting the loop characteristics sets a filter factor of a loop filter inserted into the carrier regenerative loop.

4. (Original) The radio digital signal receiver according to claim 3, wherein said burst symbol signal is a BPSK-modulating signal.

5. (Previously Presented) The radio digital signal receiver according to claim 3, wherein said decoding error rate to be detected is the bit error rate of a predetermined polyphase PSK-modulating signal.

6. (Currently Amended) A radio digital signal receiver comprising a down-converter having a local oscillator, a carrier regenerator, a demodulator for demodulating a received modulated wave signal and a decoder for taking a digital signal from the demodulated signal, further comprising:

means for detecting a received C/N of the received modulated wave on the basis of said demodulated signal;

means for detecting a decoding error rate of the digital signal at a time when the detected C/N exceeds a first predetermined threshold value; and

~~means for determining the magnitude of the decoding error rate of said digital signal when the detected received C/N takes a predetermined value; and~~

means for ~~changing~~ selecting a carrier regenerative loop characteristic for said carrier regenerator on the basis of foresight information for the relationship among three values of a received C/N, a decoding error rate and an inherent phase noise of the local oscillator in the down-converter and ~~the determined result of the magnitude of said detected~~ detected decoding error rate.

wherein the means for selecting a carrier regenerative loop characteristic operates so that (i) if the detected decoding error rate is equal to or less than a second predetermined threshold value, a carrier regenerative loop characteristic corresponding to a critical CNR by a phase noise having a rapid variation property is set up and (ii) if the detected decoding error rate exceeds the second predetermined threshold value, a carrier regenerative loop characteristic corresponding to a critical CNR by a phase noise having a gentle variation property.

7. (Original) The digital radio signal receiver according to claim 6, wherein said decoding error rate to be detected is the bit error rate of a predetermined polyphase PSK-modulating signal which is demodulated in the burst symbol reception mode for regenerating a carrier from the burst symbol signal.

8. (Original) The radio digital signal receiver according to claim 6 or claim 7, wherein means for changing said loop characteristics changes the filter factor of a loop filter inserted into the carrier regenerative loop.

9. (Original) The radio digital signal receiver according to claim 7, wherein said burst symbol signal is a BPSK-modulating signal.

10. (Previously Presented) The radio digital signal receiver according to claim 7, wherein said predetermined polyphase PSK-modulating signal is an 8PSK-modulating signal.

11. (Currently Amended) A signal processing method used in a radio digital signal receiver for down-converting a received modulation signal by using a down-converter, demodulating the received modulated signal by using a regenerated carrier

and decoding a digital signal from a demodulated signal, said method comprising the steps of:

detecting a received C/N of said received modulated signal on the basis of said demodulated signal;

determining whether said detected received C/N ~~coincides with the predetermined~~ exceeds a first predetermined threshold value;

when said received C/N ~~coincides with~~ is determined to exceed said predetermined threshold value,

detecting a decoding error rate of said digital signal;

comparing the magnitude of the detected decoding error rate with a predetermined threshold value; and

~~changing~~ selecting the characteristic of the carrier regenerative loop on the basis of said compared result,

wherein said predetermined value for the received C/N and said predetermined threshold are determined on the basis of foresight information for the relationship among three values of a received C/N, a decoding error rate and an inherent phase noise of a local oscillator in the down-converter, and

wherein the means for setting carrier regenerative loop characteristics operates so that (i) if a detected decoding error rate is equal to or less than a second predetermined threshold value, a carrier regenerative loop characteristic corresponding to a critical CNR by a phase noise having a rapid variation property is set up, and (ii) if the detected decoding error rate exceeds the second predetermined threshold value, a carrier regenerative loop characteristic corresponding to a critical CNR by a phase noise having a gentle variation property.

12. (Previously Presented) The radio digital signal receiver according to claim 5, wherein said predetermined polyphase PSK-modulating signal is an 8PSK-modulating signal.

